Section 1 **MANAGEMENT OF CHANGE (MOC)**

ABU:	Plant:	Year:
RLOP	Gas Recovery Plant 19	2010

MOC No:	Originator:	Date Issued:	Passport No:	EWO No:
22096	Bleckinger, Megan R.	6/8/2010		

Section 2 Reviewer:	MOC Category:	PSM:	MOC Type:	Expiration Date:	Other Temporary Reason
Seidlitz, Michael R.	Routine	PHA A/C	Permanent		

Project/Equipment Title: Adding Low Temperature Alarm to C-1920 Tray 4

Description of Change:

PHA A/C Record # 16927 (Item number 14.1.2.1 and 21.2.1.1)

Add new low temperature alarm to 89TC243. The new low limit is 245 F. After reviewing process data 89TC245 is never below 245F during stable operations. ~~Please change COD table to reflect the new low limit. This MOC must be past Stage 2 before 7/9/2010.~~

MOC will be required if the change will:

- ☐ Cause the use of different feed, chemicals or catalysts?
- ☑ Cause the use of different process conditions, process control, instrumentation, and protective devices or affect upstream/downstream plants?
- ☐ Cause the use of new or modified equipment [which is other than inkind]?
- ☐ Alter equipment siting, building, trailer locations, roads or fire protection?
- ☐ Require modifying existing and/or developing new procedures?

Section 2

☑ Simultaneously Begin Construction and Start-up

Stage 1	Pre-Implementation	Dept./Person Responsible	Date Complete	Completed By	References
	Design Review				
	Process Engineering Review	Bleckinger, Megan R.	6/8/2010	Bleckinger, Megan R.	
	Instrumentation Review				
	Control System Review	Thomas, Lekha S.	7/6/2010	Thomas, Lekha S.	
	Utilities Review				
	Environmental/Regulatory Review	Tarter, Donald J.	6/24/2010	Elliott, Brad B.	
	Safety/Regulatory Review				
	Building Permits Review	Linares, Elena E.	6/17/2010	Linares, Elena E.	
	Mechanical Review				
	Inspection Review				
	Metallurgy Review				
	Contruction Review				
	Leak Seal Review				
	Relief System Review				
	Infrastructure Review				
	PHA/HSE Review	Bleckinger, Megan R.	6/9/2010	Bleckinger, Megan R.	

Authorization to Implement Change (Begin Construction): Approver: Seidlitz, Michael R. Date: 6/29/2010

Stage 2	Pre-Startup	Dept./Person Responsible	Date Complete	Completed By	References
	Procedures Review	Henrickson, Alan C.	7/8/2010	Henrickson, Alan C.	
	Communication/Training 1	Barthel, John J.	7/8/2010	Barthel, John J.	
	Pre Start-up Safety Review	Bleckinger, Megan R.	7/8/2010	Bleckinger, Megan R.	

Authorization to Start-Up Change: Approver: Seidlitz, Michael R. Date: 7/9/2010

Extension of Temporary Change Approved By:

Approver:	Expiration Date:	Extention Reason

Stage 3	Post-Startup	Dept./Person Responsible	Date Complete	Completed By	References
	Communication/Training				
	Process Safety Information	McCall, Patrick D.	7/12/2010	McCall, Patrick D.	

Change in Place - Reviews, Documentation & Testing Complete

Approver:	Date:
Seidlitz, Michael R.	7/19/2010

MOC Cancelled:

Approver:	Date:
Cancellation Reason:	

Note 1: Emergency request for change should be routed by the Approver on the next working day

Retain Original in Division for five Years

PROCESS ENGINEERING REVIEW CHECKLIST

You have been assigned a Process Engineering Review.
This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number 22096
Filing Reference
Person Responsible Bleckinger, Megan R.
Completed By Bleckinger, Megan R.
Date Completed 6/8/2010

Project/Equipment Title:

Adding Low Temperature Alarm to C-1920 Tray 4

DOCUMENTATION

- ☐ Drafting Work Requisition, MFG-5545
- ☐ Maximum Intended Inventory Update
- ☐ MSDS's
- ☐ PED Records
- ☐ Relief System Drawings

PROCESSES REVIEW

- ☐ ASTM-TBP-EFV Distillation Relationships
- ☐ BIN Best Practice
- ☐ Characterization of Petroleum Fractions
- ☐ Composition & Flow Information
- ☐ Conversion Factor & Constants
- ☐ Delivery Needs
- ☐ Densities
- ☐ Fundamental Properties
- ☐ Honeywell
- ☐ Honeywell Process Simulator
- ☐ Material & Energy Balance
- ☐ New Catalyst of Feeds
- ☑ Operating Parameters
- ☐ Physical Properties of Streams or Catalysts
- ☐ Solubilities
- ☐ Suppliers' Performance
- ☐ Surface Tensions
- ☐ Thermal Properties
- ☐ Upstream & Downstream Impacts
- ☐ Vapor-Liquid Equilibria
- ☐ Vapor Pressures
- ☐ Viscosities

SUMMARY OF REVIEW*

Operating data for 2005- 2Q2010 indicates no time period when 89TC245 was below 245F during normal operation. Data is attached in PSI.

*When possible include copies of documents referenced in the summary.

CONTROL SYSTEM REVIEW CHECKLIST

You have been assigned a Control System Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	22096
Filing Reference	
Person Responsible	Thomas, Lekha S.
Completed By	Thomas, Lekha S.
Date Completed	7/6/2010

Project/Equipment Description:

PHA A/C Record # 16927 (Item number 14.1.2.1 and 21.2.1.1)

Add new low temperature alarm to 89TC243. The new low limit is 245 F. After reviewing process data 89TC245 is never below 245F during stable operations. Please change COD table to reflect the new low limit. This MOC must be past Stage 2 before 7/9/2010.

CONTROL SYSTEM:

- [x] Alarm Objective Analysis
- [ ] Analyzer Instruments
- [ ] Chevmon
- [ ] Control Objectives Analysis
- [ ] Control Room Design
- [ ] Control Systems
- [ ] Control Valves
- [x] DCS
- [ ] Egatrol
- [ ] Electrical One-lines
- [ ] Field Installation
- [ ] Flow Measurements
- [ ] Honeywell
- [ ] Honeywell Process Simulator
- [ ] Instrument Seals, Purges and Winterizing
- [ ] Intrinsic Safety
- [ ] Ladder Logic Diagrams
- [ ] Level Measurements
- [ ] Loop Diagrams
- [ ] P&ID Change due to New / Modified equipment
- [ ] P&ID's Change - Field condition not matching existing P&ID
- [ ] Pressure Measurements
- [ ] Process Alarms
- [ ] Process Control
- [ ] Relief Systems
- [ ] Shutdown Systems
- [ ] System Design
- [ ] Temperatue Measurements

SUMMARY OF REVIEW*

The COD Table currently indicates that 275F is the safe COD lower limit. If this information is no longer valid then we should make sure that the COD table gets modified as part of the MOC.

Alarm Prioritization using the Std Chevron Alarm Prioritization Matrix:

Consequence- Unstable downstream column operations and lifting of C-1950 PRD. Possible environmental impact and shutdown of all units. Calling it MAJOR because of the potential impact to shut down all units

Maximum Time to Respond- 5-30 mins

This classifies as a low priority alarm.

*When possible include copies of documents referenced in the summary.

ENVIRONMENTAL REGULATORY REVIEW CHECKLIST

You have been assigned a Regulatory Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number: 22096
Filing Reference:
Person Responsible: Tarter, Donald J.
Completed By: Elliott, Brad B.
Date Completed: 6/24/2010

Project/Equipment Title:

Adding Low Temperature Alarm to C-1920 Tray 4

CHEVRON:

- [ ] Yellow Book

REGULATORY:

- [ ] Army Corp Permit
- [ ] BAAQMD Air Regulations & Permits (including TitleV)
- [ ] Bay Conservation & Development Commission (BCDC)
- [ ] CEQA (EIR's, etc.)
- [ ] City of Richmond Conditional Use Permits (Land use and Hazardous Materials)
- [ ] City of Richmond Design Review Board
- [ ] Permit to Build and Remove Wells, County Permit Required
- [ ] Department of Transportation (DOT)
- [ ] EPA Benzene Neshap
- [ ] EPA Benzene Waste (BW) NESHAP
- [ ] EPA MACT Requirements
- [ ] EPA New Source Performance Standards (NSPS)
- [ ] Regulation 8 Organic Compounds Rule 8 Wastewater Collection and Separation Systems
- [ ] Risk Management & Prevention Plan (RMPP)
- [ ] RWQCB Waste Discharge Orders, EPA Consent Agreement Sites
- [ ] RWQCB NPDES Regulations & Permits
- [ ] RWQCB SB-1050, Waste Discharge Requirements (WDR)
- [ ] Spill Prevention & Counter Measure Plan (SPCC)
- [ ] Waste Regulations and Permits
- [ ] Wharf-related agencies (SLC, USCG, OSPR, EPA)
- [ ] [x] **Additions, modifications, or deletions of VOC Component/Equip**

SUMMARY OF REVIEW*

Per PE, change entails modifications to process - no equipment changes.

No environmental regulatory issues.

*When possible include copies of documents referenced in the summary.

BUILDING PERMITS REVIEW CHECKLIST

You have been assigned a Regulatory Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number	22096
Filing Reference	
Person Responsible	Linares, Elena E.
Completed By	Linares, Elena E.
Date Completed	6/17/2010

Project/Equipment Title:

Adding Low Temperature Alarm to C-1920 Tray 4

SUMMARY OF REVIEW*

MOC signed off. A City of Richmond building permit is not required based on the information provided in the scope of work, but is required for any new construction such as: electrical, instrumentation, pipe supports, structural modifications, and etc.

*When possible include copies of documents referenced in the summary.

INSPECTION REVIEW CHECKLIST

You have been assigned a Inspection Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number: 22096

Completed On: 6/9/2010

Completed By: Bosworth, Gregory A.

Person Responsible: Bosworth, Gregory A.

Project/Equipment Description:

PHA A/C Record # 16927 (Item number 14.1.2.1 and 21.2.1.1)

Add new low temperature alarm to 89TC243. The new low limit is 245 F. After reviewing process data 89TC245 is never below 245F during stable operations. Please change COD table to reflect the new low limit. This MOC must be past Stage 2 before 7/9/2010.

Yes	No	Plant Protection/Security Review
☐	☑	City Fire-Plan Review is Mandato
☐	☑	City Fire-Permit is Mandato
☐	☑	City Acceptance Test is Mandato
☑	☐	Office of Fire Prevention Review On

The scope of work has been reviewed by the Chevron Fire Marshal. Scope of work does not constitute a change in fire protection.

*When possible include copies of documents referenced in the summary.

HEALTH & SAFETY EVALUATION

Date Issued: 6/8/2010 **Maximo Number:** **MOC Number** 22096

ABU: RLOP **EWO Number** **Filing Reference**

Plant: Gas Recovery Plant 19 **Person Responsible** Bleckinger, Megan R.

Section 2 Reviewer: Seidlitz, Michael R. **Completed By** Bleckinger, Megan R.

Project/Equipment Title: Adding Low Temperature Alarm to C-1920 Tray 4 **Date Completed** 6/9/2010

Description: PHA A/C Record # 16927 (Item number 14.1.2.1 and 21.2.1.1)

Add new low temperature alarm to 89TC243. The new low limit is 245 F. After reviewing process data 89TC245 is never below 245F during stable

Step 1: ☐ **Notify USW** ☐ **USW Representation Present** **USW Representative:**

Worker's Committee Member/Steward's comments if unable to attend:

☐ **Notify Trainer** ☐ **TrainerRepresentation Present** **Training Representative:** John Barthel

Step 2: **Involve: Operations, Maintenance, Technical and others with appropriate expertise relevant to the change (CRTC, Contractors, etc)**

Attendees: M. Bleckinger, G. Carter, L. Harris, M. Demcsak, S. Brown, G. Zakrewski

Step 3: **Think about the task at hand. Discuss the existing situation. Discuss the change. Discuss the impact of the change on the existing situation. Determine the training requirements for this change.**

Step 4: **Training Type:** 1

Develop a list of concerns, consider your options, consider your following:

*H2S *NH3 *Acid *Caustic *Benzene *Fall Protection *Staging *Scott Air *PPE *Hot Work *Confined Space Entry *Evacuation Plan *Safety Operator

Concern	Consequence	Mitigation	Proceed Safely

HSE Action Items

Additional Comments

Group Discuss low temperature alarm limit. No one had an issue with 245F. PED reviewed 5 years worth of data to obtain this value.

PROCEDURE REVIEW CHECKLIST

You have been assigned a Procedure Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

MOC Number 22096
Filing Reference
Person Responsible Henrickson, Alan C.
Completed By Henrickson, Alan C.
Date Completed 7/8/2010

Project/Equipment Description:

PHA A/C Record # 16927 (Item number 14.1.2.1 and 21.2.1.1)

Add new low temperature alarm to 89TC243. The new low limit is 245 F. After reviewing process data 89TC245 is never below 245F during stable operations. Please change COD table to reflect the new low limit. This MOC must be past Stage 2 before 7/9/2010.

- ☐ Alarm Procedures
- ☐ Any Special or unique hazards
- ☐ COD/Ops Monitor
- ☑ Consequences of deviation
- ☐ Control measure to be taken if physical contact or airborne exposure occurs.
- ☐ Precautions necessay to prevent exposure, including administrative controls, engineering controls, and personnel protective equipment.
- ☐ properties of, and hazards presented by, the chemicals and operation of the process.
- ☐ References to additional procedures, such as Safe Work Practices
- ☐ Routine Duties
- ☐ Safety system and their functions
- ☐ Steps required to correct and/or avoid deviation

Steps fo each operatong Phase

- ☐ Emergency
- ☐ Normal
- ☐ Start-Up/Shutdown
- ☐ Temporary

SUMMARY OF REVIEW*

Added new lower safe limit to Vol#1 COD Table Pg. 10

*When possible include copies of documents referenced in the summary.

Stage Two Training and Communication Review

1/29/2013 10:06:14 AM

MOC No: 22096

Date Completed: 7/8/2010

Completed By: Barthel, John J.

Person Responsible: Barthel, John J.

Project/Equipment Title:

Adding Low Temperature Alarm to C-1920 Tray 4

Summary of Review:

Added new low temperature alarm to 89TC243. The new low limit is 245 F. After reviewing process data 89TC245 is never below 245F during stable operations. Please change COD table to reflect the new low limit.

All affected employees have been trained via e-mail.

- [x] **Identify the affected employees.**
  - * **Maintenance and Technical affected?**
  - * **Employee who will require training to start up the change based on the level of training.**
  - * **Employees who will receive training after the start up BUT before they can perform work affected by the change**
- [ ] **Procedures have been modified/written (Ops/SSO/Trainer)**
- [x] **Identify the affected employees..**
  - * **Lesson plan cover sheet (includes training objective statement and list of affected employees)**
  - * **Procedural changes (Standing Orders, mark-ups)**
  - * **Flow daigrams (final or mark-ups)**
- [x] **Determine level of training**
- [ ] **Training has been scheduled**
- [ ] **Affected employees have been trained in order to start up the change.**

APPENDIX III
PRE-START-UP SAFETY REVIEW CHECKLIST

You have been assigned a Pre Start-Up Safety Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

Passport No:
EWO No.:
MOC PSSR.: 22096.001

MOC Number 22096
Filing Reference
Person Responsible Bleckinger, Megan R.
Completed By Bleckinger, Megan R.
Date Completed 7/8/2010

Project/Equipment Description:

Adding Low Temperature Alarm to C-1920 Tray 4

Subsystem:

NOT The PSSR facilitator shall involve employees with expertise in process operations, maintenance, and engineering, based upon their experience and understanding of the process system being evaluated.

The following requirements for PSSR shall be addressed:	**Approved by:**	**Date**
1. Has the equipment and construction been completed in accordance with the critical design specifications? Some examples of how this may be accomplished are: * Review of equipment quality assurance and inspection records. * Review of construction inspection records. * P & ID "check" after mechanical completion, and facility "walk-through" inspection. **Justification:** Yes	Bleckinger, Megan R.	7/7/2010
2. Are Safety, operating, manintenance, and emergency procedures in place and adequate? * The phrase "in place and adequate" means: written, reviewed, approved, and accessible to employees requiring the procedures in their work. * This does not prevent the use of "mark-up" procedures to satisfy the requirement, but these must undergo the same review and approval and training interaction as would "the final version" of the same procedure and would require rigorous control. **Justification:** COD Table updated	Bleckinger, Megan R.	7/8/2010
3. Has the communication or training of affected operating, maintenance, or contract workers been completed? * Maintenace employees, contractors, and other employees whose work is affected by the change must be informed of the change and training in the impact on their job tasks before the changed equipment is started up. **Justification:** J. Barthel completed	Bleckinger, Megan R.	7/8/2010
4. Have the quality assurance goals of mechanical integrity been met? * Ensure that changes are suitable for the intended service. * Ensure that the quality of the work is acceptable. * Ensure that the quality of the Leak Seal is acceptable. **Justification:** N/A	Bleckinger, Megan R.	7/7/2010
5. Have all recommendations resulting from PHA's or HSE's been addressed of resolved * Ensure tall Recommendations have been documented as addressed or resolved	Bleckinger, Megan R.	7/7/2010

APPENDIX III

PRE-START-UP SAFETY REVIEW CHECKLIST

You have been assigned a Pre Start-Up Safety Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

Passport No:
EWO No.:
MOC PSSR.: 22096.001

MOC Number 22096
Filing Reference
Person Responsible Bleckinger, Megan R.
Completed By Bleckinger, Megan R.
Date Completed 7/8/2010

Project/Equipment Description:

Adding Low Temperature Alarm to C-1920 Tray 4

Subsystem:

Justification: This is a PHA A/C

Are there any safety-related exceptions encountered during the PSSR that require follow-up after started up? ☐ **Yes**

Miscellaneous Comments:

Exception	*Owner*	*Completed By*	*Completed On*	*Notified*

PSI REVIEW CHECKLIST

MOC Number	22096
Filing Reference	
Person Responsible	McCall, Patrick D.
Completed By	McCall, Patrick D.
Date Completed	7/12/2010

Project/Equipment Title:

Adding Low Temperature Alarm to C-1920 Tray 4

PSI Documents

Typ	Numbe	Owne	Markup Date	Final Date		Document UR	
Word Document					Brows	\\ric841vmg3web1\psidocs$\2	Open

SUMMARY OF REVIEW*

No PSI.

*When possible include copies of documents referenced in the summary.